

Agricultural Services

(SIC 07)

SIGNIFICANT POINTS

- About 40 percent of all agricultural service workers are employed in California, Florida, and Texas.
- Entry-level jobs that can be learned on the job in less than a week—including animal caretakers, farm workers, and landscaping, groundskeeping, and nursery laborers—account for a substantial portion of employment.

Nature of the Industry

The agricultural services industry is made up of several diverse segments that provide services to an equally diverse clientele. Groups using services from the industry range from agricultural producers seeking stronger financial returns to their farmland through skilled farm management, to individual urban dwellers needing veterinary care for their pets, and urban and suburban businesses wishing to boost “curb appeal” of their establishments through professional landscaping. Many of the jobs in this industry require agricultural knowledge or skills, but only about 30 percent of wage and salary employment is directly related to the production of crops or the raising of livestock.

Landscape and horticultural services, employing more than 1 in 10 wage and salary workers in this industry, provide landscape planning and installation, landscape architecture, lawn care, and grounds maintenance services. Customers range from individual homeowners to large corporations and Federal, State, and local governments.

Landscape architecture firms plan and design the development of land for projects such as parks and other recreational facilities, airports, highways, and commercial and residential buildings. They prepare site plans showing landscape features, locations of structures, and roads, walks, and parking areas, as well as specifications and cost estimates for land development. *Landscape contracting firms* actually carry out the plans designed by landscape architecture establishments. They develop a budget for the project in consultation with the client, hire the manual laborers and provide any equipment needed, and obtain the plants to be installed.

Landscaping, lawn maintenance, and groundskeeping firms establish and maintain grounds, lawns, and gardens for homeowners as well as governments, colleges and universities, real estate and land developers, and other private businesses. These firms are responsible for planting, mulching, watering, fertilizing, mowing, and seeding lawns and grounds; applying pesticides; installing turf and sod; and pruning plants and trees. They also rake leaves, clear outdoor areas of debris, remove snow, and maintain outdoor amenities and decorative features such as pools, fountains, benches, and planters.

Veterinary services employ 1 in 5 wage and salary workers in this industry and provide medical care for household pets, horses, livestock, and zoo and sporting animals. The majority of veterinary practices treat companion animals, such as dogs and cats; some practices also treat pigs, goats,

sheep, and some nondomestic animals. Veterinarians in such practices diagnose animal health problems, vaccinate against diseases such as distemper and rabies, medicate animals with infections or illnesses, treat and dress wounds, set fractures, perform surgery, and advise owners about feeding, behavior, and breeding. A smaller number of veterinary practices focus exclusively on large animals such as horses or cows, but may care for all kinds of food animals. Large animal veterinarians drive to farms or ranches to provide health services, with an emphasis on preventive care, for herds or individual animals. They test for and vaccinate against diseases, and consult with farm or ranch owners and managers on production, feeding, and housing issues. They also treat and dress wounds, set fractures, perform surgery—including cesarean sections on birthing animals.

Farm labor and management services is nearly equal in employment size to veterinary services. *Farm labor contractors or crew leaders* provide and manage temporary farm laborers—often migrant workers—who usually work during peak harvesting times. Contractors may place bids with farmers to harvest labor-intensive crops such as fruit, nuts, or vegetables, or perform other short-term tasks. Once the bid is accepted, the contractor, or crew leader, organizes and supervises the laborers as they harvest, load, move, and store the crops. *Farm management services* establishments guide and assist farm and ranch land owners, farmers, and ranchers in maximizing the financial returns to their land by managing the day-to-day activities necessary to run a farming operation. Farm management services usually negotiate with the landowner to receive a percentage of any profit resulting from agricultural production on the land. They may employ or contract with a tenant farmer to oversee the actual crop or livestock production.

Companies that provide *soil preparation* and *crop services* plant, cultivate, and harvest crops by machine, employing just over 12 percent of agricultural services workers. Because some types of farm machinery are highly specialized and very expensive, farms that do not want to invest in machinery often contract with these specialized firms to perform planting, harvesting, or other tasks. For example, farmers or farm managers might contract with crop services firms to do aerial dusting and spraying of pesticides over a large number of acres. Establishments in crop services also perform tasks to prepare crops for market, including shelling, fumigating, cleaning, grading, grinding, and packaging agricultural products.

Animal specialty services, except veterinary is the smallest segment of the agricultural services industry, accounting for

just 5 percent of wage and salary employment. It is divided into those establishments that provide livestock services and those that provide services for pets, horses, and other animal specialties. *Nonfarm animal services* include animal shelters, boarding dog kennels and horse stables, dog grooming, and animal training. *Livestock services* include firms that assist in breeding and artificial insemination, do sheep dipping and shearing, and provide herd improvement advice. Breeding services usually monitor herd condition and nutrition; evaluate the quality and quantity of forage; recommend adjustments to feeding when necessary; identify the best cattle or other livestock for breeding and calving; advise on livestock pedigrees; inseminate cattle artificially; and feed and care for sires.

Working Conditions

The agricultural services industry is attractive to people who enjoy working outdoors or with animals. However, many people in this industry work long hours, and farm operators, managers, crew leaders, farm equipment operators, and farm workers may work a 6- or 7-day week during the planting and harvesting seasons. Workers in these establishments also routinely perform tasks that involve much physical exertion, often requiring strength and manual dexterity, and operate heavy machinery.

Workers in veterinary and animal specialty services may have to lift, hold, or restrain animals of all sizes, and risk being bitten, kicked, or scratched. Evening, night, and weekend or holiday work is common, and some of the tasks of animal caretakers, such as cleaning cages and lifting heavy supplies, may be unpleasant and physically demanding. Many of the jobs in landscape and horticultural services are also physically demanding and repetitive. Laborers do much bending, kneeling, and shoveling, and lift and move supplies as they plant shrubs, trees, flowers, and grass and install decorative features.

Many workers in all segments of the agricultural services industry risk exposure to insecticides, germicides, and other potentially hazardous chemicals that are sprayed on crops and plants or used to treat flea infestation or other conditions in animals.

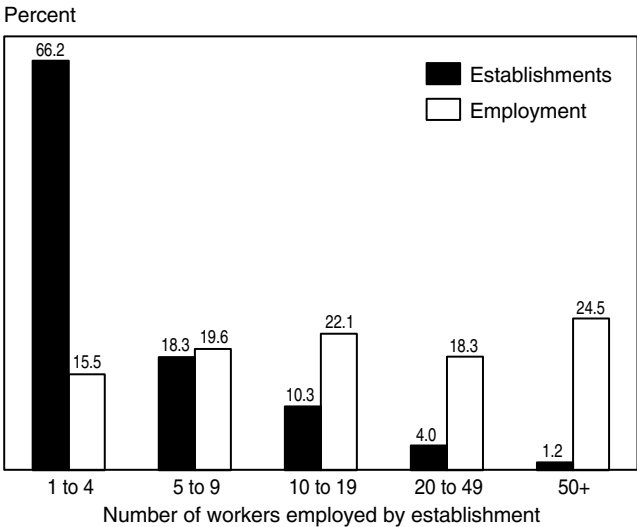
Also, much of the work in this industry is performed outdoors in all kinds of weather, and adequate sanitation facilities, including drinking water, may not always be available to employees. Some farm workers and landscaping laborers must also cope with the difficulty in obtaining year-round, full-time employment because of the short-term or seasonal nature of the work. They often must string together as many jobs as possible. Workers also run the risk of injury when working with planting and harvesting equipment, such as combines, chain saws, and electric clippers. In 1997, the rate of injury and illness in agricultural services was 7.9 per 100 full-time workers, compared to 7.1 for all private industry.

Employment

In 1998, the rapidly growing agricultural services industry comprised just over 1 million wage and salary workers, and about 450,000 self-employed workers. The following tabulation shows the distribution of wage and salary employment by industry segment:

Landscape and horticultural services	460,000
Veterinary services	196,000
Animal services, except veterinary	53,000
Agricultural services, not elsewhere classified	296,000

Few agricultural services establishments employ 20 workers or more



Source: U.S. Department of Commerce, *County Business Patterns*, 1997

About 111,000 establishments employed these wage and salary workers in 1997. Agricultural services establishments are smaller than average—about 85 percent of the establishments employed 9 or fewer workers, compared to about 75 percent of the establishments in all industries combined. In addition, relatively few agricultural services firms employ 50 or more workers (chart).

The median age of agricultural services workers is 35, nearly 4 years younger than the median for workers in all industries. This industry provides employment for many new entrants to the labor market. In 1998, almost 23 percent of the industry’s workers were between 16 and 24 years old. Nearly 50 percent were under age 35, compared to 39 percent of workers in all industries combined—reflecting the high proportion of seasonal and part-time job opportunities (table 1).

Nearly 40 percent of all agricultural services workers are employed in California, Florida, and Texas. Other States with a large number of agricultural services workers include Arizona, Illinois, Pennsylvania, Ohio, and New York.

Table 1. Percent distribution of employment in the agricultural services industry by age group, 1998

Age group	Agricultural services	All industries
Total	100.0	100.0
16-19	9.3	5.4
20-24	13.7	9.5
25-34	27.2	23.8
35-44	26.9	27.5
45-54	15.2	21.0
55-64	6.0	9.8
65 and older	1.8	2.9

Occupations in the Industry

The agricultural services industry offers jobs in many occupations requiring specialized skills or the ability to operate agricultural and horticultural equipment (table 2).

Workers in the *landscaping, groundskeeping, nursery, greenhouse, and lawn service* occupations, employed largely in landscape and horticultural services establishments, account for 34 percent of industry employment. Nursery and greenhouse workers help to cultivate the plants used in landscaping projects by preparing nursery acreage or greenhouse beds for planting, and watering, weeding, and spraying trees, shrubs, and plants. They also prepare sod, trees, and other plants for transport to landscaping sites. Landscape contractors coordinate and oversee the installation of trees, flowers, shrubs, sod, benches, and other ornamental features. They implement construction plans at the site, which may involve grading the property, installing lighting or sprinkler systems, and building walkways, terraces, patios, and fountains. Landscaping laborers install and maintain landscaped areas by transporting and planting new vegetation; transplanting, mulching, fertilizing, watering, and pruning plants; and mowing and watering lawns. Some landscaping laborers, called pruners, specialize in pruning, trimming, and shaping ornamental trees and shrubs, and others, called lawn service workers, specialize in maintaining lawns and shrubs. Groundskeeping laborers perform many of the same tasks as landscaping laborers, but their duties are usually more varied, and encompass snow, leaf, and debris removal, and upkeep and repair of sidewalks, equipment, pools, fences, and benches.

Landscape architects, also concentrated in the landscape and horticultural services segment, plan and design the arrangement of flowers, shrubs, trees, walkways, fountains and other decorative features for parks, shopping centers, golf courses, private residences, and industrial parks. They also perform environmental impact studies.

Veterinarians provide health care, ranging from preventive medicine to diagnosis and treatment of diseases or injuries, for pets and farm or other animals. They also advise pet owners about feeding, behavior, and breeding, and consult with farm or ranch owners and managers on production, feeding, disease prevention and eradication. Some inspect livestock at public stockyards and at points of entry into the United States to keep diseased animals out of the country or administer tests for animal diseases, and conduct programs for disease control. *Veterinary technologists* and *technicians* usually work under the supervision of a veterinarian and assist in providing medical care to animals. They may prepare and administer injections and medications; dress wounds; take vital signs; prepare animals and instruments for surgery; and perform laboratory tests. *Veterinary assistants* also aid veterinarians, but are more involved in the basic care of animals, cleaning cages and examining areas, feeding, changing water dishes, and monitoring animals recovering from surgery.

Animal caretakers also provide basic care for animals, and feed, water, bathe, groom, and exercise those under their charge. Their duties may vary depending on the type of establishment in which they work. For example, animal caretakers employed in shelters keep records of the animals received and discharged, answer questions from the public, and euthanize seriously ill or unwanted animals, in addition to providing basic care. Animal caretakers in stables saddle and unsaddle horses, give them rub-downs, polish saddles, and store supplies and feed.

Animal breeders use their knowledge of genetics to select and breed animals, either for show or improved performance or productivity. Responsibilities typically include the feeding,

watering, and housing of breeding animals, and maintaining weight, diet, and pedigree records.

Table 2. Employment of wage and salary workers in agricultural services by occupation, 1998 and projected change, 1998-2008

(Employment in thousands)

Occupation	1998		1998-2008 Percent change
	Number	Percent	
All occupations	1,005	100.0	24.5
Agriculture, forestry, and fishing	691	68.7	26.5
Landscaping, groundskeeping, nursery, greenhouse, and lawn service occupations	337	33.5	32.0
Farm workers	178	17.7	22.0
Animal caretakers, except farm	52	5.2	25.4
Veterinary assistants	44	4.4	28.7
Supervisors, farming, forestry, and agricultural-related occupations	27	2.7	27.3
Administrative support, including clerical	96	9.6	20.1
Receptionists and information clerks	35	3.5	35.0
Secretaries	15	1.5	2.7
General office clerks	16	1.6	27.2
Bookkeeping, accounting, and auditing clerks	16	1.6	3.8
Operators, fabricators, and laborers	56	5.6	10.6
Helpers, laborers, and material movers, hand	28	2.8	6.5
Truck drivers	12	1.2	16.5
Professional specialty	44	4.4	34.0
Veterinarians	34	3.4	36.4
Executive, administrative, and managerial	37	3.6	21.3
General managers and top executives	28	2.8	22.0
Technicians and related support	35	3.5	16.2
Veterinary technologists and technicians	31	3.1	17.2
Precision production, craft, and repair	21	2.1	15.7
Mechanics, installers, and repairers	11	1.1	15.9
Marketing and sales	17	1.7	29.6
Service	8	0.8	13.2

Farm workers perform the manual labor required to plant, cultivate, and harvest crops. Their duties vary with the season. Before seeding, they may prepare the soil by tilling and fertilizing. Once the crops are partially grown, they may return to farms to cultivate fields, transplant, weed, or prune. Often, they spray crops to control weeds, harmful insects, and fungi. Some farms, such as those producing fruit or vegetables, need large numbers of workers to harvest crops. After the harvest, workers are needed to prepare produce for shipment. *Farm equipment operators* drive the heavy machinery used to mechanically harvest and combine crops.

Many of the farm workers in agricultural services contract for employment with *farm labor contractors*, or *crew leaders*. Crew leaders contract with farms to provide workers to perform what are often short-term, labor-intensive farm jobs, such

as manually harvesting, loading, and moving vegetables. The crew leader is also responsible for transporting the hired workers to the fields or orchards, and for meeting Federal and State regulations regarding the hiring of transient workers, including paying a guaranteed minimum wage, payment for overtime work, and collecting Social Security taxes. Crew leaders, like the workers they hire and supervise, may practice “follow-the-crop” migration, typically recruiting a crew in the southern States, then moving north in a set pattern as crops ripen. Others remain in a single locality.

Farm managers use their knowledge of agriculture and business to make farming management decisions for landowners. Managers may employ a farm operator or contract with a tenant farmer to run the day-to-day activities involved in crop or livestock production. Farm managers help select the type and mix of crops; select practices for tillage and soil conservation as well as methods of irrigation; purchase seed, pesticides, and fertilizers; determine crop transportation and storage requirements; market the crops or livestock; oversee maintenance of the property and equipment; recommend capital improvements; and monitor operating expenses. Farm managers may also hire and assign workers when needed, contract with other firms for specialized services such as chemical spraying of crops, and advise land owners about the purchase or sale of additional farm lands. Managing an agricultural production operation is a sophisticated business, and farm managers use computers extensively. Some also use cutting-edge technologies, such as the Global Positioning System and remote sensing.

Training and Advancement

The skills needed by workers in the agricultural services industry differ widely by occupation. The industry is characterized by an unusually high proportion of workers who have not finished high school. These workers qualify for entry-level positions as animal caretakers, farm laborers, and landscaping, groundskeeping, and nursery laborers, which require little or no prior training or experience. The basic tasks associated with many of these jobs usually can be learned in less than a week, and most newly hired workers are trained on the job. Training often is given under the close supervision of an experienced employee or supervisor.

For jobs such as veterinarian, farm manager, and landscape architect, a minimum of 4 years of formal postsecondary training are needed. Aspiring veterinarians generally complete 4 years of preveterinary study, including biology, chemistry, physics, and calculus, before embarking on 4 years of veterinary medical school. They must graduate with a Doctor of Veterinary Medicine degree and obtain a license to practice. Prospective landscape architects must complete a professional program in landscape architecture, and be registered or licensed before they may practice in most States. Farm managers usually obtain a bachelor’s degree in a business-related field with a concentration in agriculture. A degree in an agriculture-related discipline with an emphasis on business courses, such as marketing and finance, is also good preparation. Many States require farm managers to carry a real estate license. Although accreditation is not mandatory, farm managers may, after several years of experience and meeting established standards, obtain the designation Accredited Farm Manager through the American Society of Farm Managers and Rural Appraisers. College training and professional licensing may also be required for many other jobs in agricultural services,

such as grounds manager and landscape contractor. Schools of agriculture are found at many State universities and all State land grant colleges. They offer a variety of programs at the bachelor’s, master’s, and doctoral levels.

Community colleges and vocational schools also offer an array of programs for people interested in various agricultural services occupations—for example, animal breeder and farm equipment operator. Many employers prefer previous work experience, combined with vocational certification or a 2-year degree. Many States have licensing requirements for veterinary technologists, which include 2 years of college-level study in an accredited veterinary technology program culminating in an Associate in Applied Science or related degree, and passing an examination before being allowed to fully assist veterinarians.

Opportunities for advancement for agricultural services workers vary by occupation. Farm workers have limited opportunities for advancement, but experienced and highly motivated laborers may move into positions as farm labor contractors or crew leaders. Likewise, landscaping, lawn service, and groundskeeping laborers may advance to supervisory positions after gaining experience, or become a manager of a lawn service firm. Some become self-employed landscape or lawn service contractors, but such positions often require additional formal training. Although many top-level managerial and professional jobs—especially in small companies—are filled by promotion from within, technological innovations in agronomy and animal husbandry have made postsecondary education advantageous for career advancement in agricultural services.

Earnings

Average earnings in the agricultural services industry are relatively low—nonsupervisory workers averaged \$9.95 an hour in 1998, compared to \$12.77 an hour for workers throughout private industry. Nonsupervisory workers in landscape and horticultural services earned somewhat more than other agricultural services workers.

Earnings can vary greatly during the year, depending on the season. Many workers in this industry find work only in the growing or harvesting seasons and are unemployed or work in other jobs during the rest of the year. Nearly 18 percent worked part-time in 1998, compared to the industry average of 15.9 percent. Part-time workers are less likely to receive employer-provided benefits. Earnings in selected occupations in agricultural services in 1997 appear in table 3.

According to a survey by the American Veterinary Medical Association, veterinarians in private clinical practice earned an average income of \$76,360 in 1997, and first-year veterinary school graduates entering private clinical practice had average starting salaries of \$36,724.

Union membership in the agricultural services industry is far below the average for all industries. In 1998, less than 2 percent of all agricultural services workers were union members or were covered by union contracts, compared to 15.4 percent of workers in all industries.

Outlook

Wage and salary jobs in agricultural services are projected to increase 25 percent through the year 2008. In addition, numerous job openings will arise from the need to replace workers who leave the industry every year. Much of the work in

entry-level jobs, which account for a substantial portion of all jobs in the industry, is physically demanding and low paying, making it unattractive for workers over the long term. Turnover is very high among landscaping and groundskeeping laborers, nonfarm animal caretakers, and farm workers, reflecting the seasonal and part-time nature of the work as well as the low pay and high physical demands.

Table 3. Median hourly earnings of the largest occupations in agricultural services, 1997

Occupation	Agricultural services	All industries
Veterinarians and veterinary inspectors	\$23.56	\$23.97
General managers and top executives	17.91	26.05
First line supervisors and managers/ supervisors-agricultural, forestry, fishing, and related workers	12.02	12.94
Veterinary technicians and technologists	9.23	9.27
Receptionists and information clerks	7.70	8.69
Laborers, landscaping and groundskeeping	7.69	8.08
Veterinary assistants	7.57	7.57
Animal caretakers, except farm	6.57	6.97
Graders and sorters, agricultural products	5.70	6.20
Farmworkers, food and fiber crops	5.65	5.66

The agricultural services industry grew very rapidly during the 1980s and first half of the 1990s, with all segments of the industry experiencing employment increases. Job growth was fueled by especially strong increases in two of the largest segments—landscaping and horticultural services, and veterinary services. Although demand for agricultural services is expected to remain strong, the rate of employment growth is expected to slow over the 1998-2008 period.

Employment gains in landscaping and horticultural services are tied, in part, to the level of new construction. Construction activity tends to vary depending on the health of the overall economy. Over the long run, the construction industry is expected to grow, though at a slower rate than over the previous 10-year period. Federal, State, and local government budget constraints may also limit demand for services to beautify and care for grounds surrounding public buildings. Nevertheless, employment outlook should remain bright. Individuals and businesses are expected to increasingly recognize the value of maintaining and renovating existing landscaping and grounds. As businesses compete to attract customers, enhancing curb appeal by investing in landscaping and lawn services will become an increasingly important marketing method. A growing number of homeowners continue to use lawn maintenance and landscaping services to enhance the beauty of their property and to conserve leisure time. Additionally, many land developers and builders who face complex environmental regulations and land-use zoning issues are turning to landscape architecture firms for help in planning sites and integrating buildings and other structures into the natural environment. Overall concern about environmental issues and a growing appreciation for nature will add to the desire for more professional landscaping and horticultural services.

Employment gains in veterinary services, partially attributable to increases in the number of pet owners, are also expected to slow slightly as the pet population grows more slowly during the projection period. Slowdowns will be tempered as new technology and better marketing of nontraditional pet

medical services, such as preventive dental care, expand the treatment provided for individual animals.

Nonfarm animal services, except veterinary, should also be affected by slowing trends in pet population growth. However, pet owners are expected to increasingly take advantage of grooming services and daily and overnight boarding services.

Expect slower employment growth of the farm-related agricultural services—crop services, soil preparation services, farm labor and management services, and livestock services—that are linked to the health of the agricultural production industry. When agricultural producers face difficult times, such as the recent economic downturns in some Asian countries that reduced the demand for exports of agricultural products from the United States, the demand for farm-related agricultural services also drop. Over the long-run, however, overall employment should slowly increase. Growth in the animal population, emphasis on scientific methods of breeding and raising livestock and poultry, and continued support for public health and disease control programs, will contribute to the demand for farm-related veterinary and livestock animal services. Agricultural producers and farm managers should continue to turn to farm labor contracting services to ease their responsibility for meeting labor requirements for workers who are only needed on a temporary basis. Mechanization of the industry is largely in place and food needs will continue to grow as the population increases. However, agricultural producers are expected to continue to produce more with less labor. The dominance of large producers, food companies, and agribusiness, along with farms that are growing in average size, allows the use of state-of-the-art, more efficient farming practices and technologies, leading to slower demand for contracting services.

Sources of Additional Information

For general information about agricultural and farming occupations, contact:

- National Association of State University and Land Grant Colleges, One Dupont Circle NW., Suite 710, Washington, DC 20036-1191.

For information on careers in landscaping and horticulture, contact:

- Associated Landscape Contractors of America, Inc., 150 Eldon St., Suite 270, Herndon, VA 20170.
- American Society of Landscape Architects, 4401 Connecticut Ave. NW., Suite 500, Washington, DC 20008.
Internet: <http://www.asla.org/asla>
- Professional Grounds Management Society, 120 Cockeysville Rd., Suite 104, Hunt Valley, MD 21030.

For information on careers in veterinary science, send a self-addressed, stamped envelope to:

- American Veterinary Medical Association, 1931 N. Meacham Rd., Suite 100, Schaumburg, IL 60173-4360.

For information on careers in animal specialty services, contact:

- National Association of Animal Breeders, 401 Bernadette Dr., P.O. Box 1033, Columbia, MO 65205-1033.
Internet: <http://www.naab-css.org>

For a list of State-licensed dog grooming schools, send a self-addressed, stamped envelope to:

- National Dog Groomers Association of America, P.O. Box 101, Clark, PA 16113.

For information on careers in farm management, contact:

- American Society of Farm Managers and Rural Appraisers, 950 S. Cherry St., Suite 508, Denver, CO 80222.
Internet: **<http://www.agri-associations.org>**

Information on these occupations may be found in the 2000-01 *Occupational Outlook Handbook*:

- Farmers and farm managers
- Landscape architects
- Landscaping, groundskeeping, nursery, greenhouse, and lawn service occupations
- Veterinarians
- Veterinary assistants and nonfarm animal caretakers